

Correlation between tea use and personality

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Abstract

A study of 84 respondents in an online questionnaire showed that there is no significant difference in agreeableness between tea and coffee users nor is there a correlation between tea use and the level of dubiousness. Agreeableness was measured using the Big Five Inventory and dubiousness was measured using hidden data gathered by counting the number of clicks while making the questionnaire.

Keywords: Tea; Coffee; Personality; Agreeableness; Dubiousness

Introduction

Tea is a beverage that many people consume on a daily basis. In many countries, drinking tea is a tradition that has been present for centuries. In the Netherlands, tea is the second most drunk beverage on a yearly basis (CBS 1997). With its 100 liters of tea per person per year, it is second to coffee, which has a yearly consumption of 145 liters in one year. On a daily basis, most people prefer one beverage over the other. In the media, claims are made that people who drink tea a lot have certain personality traits.

In the past, several researches have been done trying to find a correlation between drinking habits and personality. In these tests, tea and coffee were used in the same category, that of caffeinated beverages. Richardson et al. (1995) compared caffeine consumers to non-consumers and found that the first were more extroverted and had higher addiction scores. The addiction factor is also studied by Brice and Smith (2002), which focussed on the relation between personality and the use of caffeine drinks, alcoholic drinks and smoking. They found little evidence to support the

hypothesis that personality traits influences the caffeine consumption. Hewlett and Smith (2005) compared personalities of drinkers and non-drinkers, but found no significant differences between the two groups.

However, in past researches, the distinction was never made between the drinking of tea and coffee. This research aims to compare personality traits of people that drink many cups of tea to that of those who drink few or none at all. The total amount of caffeine intake is not taken into account.

The hypothesis, based on claims by the media, is that heavy tea users will be more agreeable and dubitable. The personality traits that correspond to these characteristics will be compared to those of moderate or non-consumers.

Method

The participants in an online questionnaire were 84 volunteers in the age range of 17 and 67 (Mean age = 25,9 years) and of mostly higher educational backgrounds (mode = science education, $n = 42$). The questionnaire consists of the big five personality test, questions on beverage use and cover questions to hide the purpose of the test and to prevent socially desired answers. Tea or coffee drinkers were defined as respondents who drink two or more cups of the certain beverage a day ($n = 14$ cups a week).

To measure the personality traits of the respondents we made use of the Big Five Inventory (BFI) by Oliver P. John (1991). The BFI is a common personality test based on the Five-Factor Model of personality structure (Digman 1990) and tests personality on extraversion, agreeableness, conscientiousness, neuroticism and openness. To measure

dubiousness the number of clicks made in the questionnaire was recorded where the minimum number of clicks possible for a valid test was 54 (avg. = 58,5).

Three participants were removed from the dataset due to incomplete answers. Two extreme outliers, one in the number of clicks and one in the agreeableness factor, had to be discarded because the statistical test used, a t-test, is not robust to outliers.

The hypothesis as formulated in the introduction is that the mean agreeableness of our often-tea drinking group (μ_1) is higher than those who do not often drink tea (μ_2).

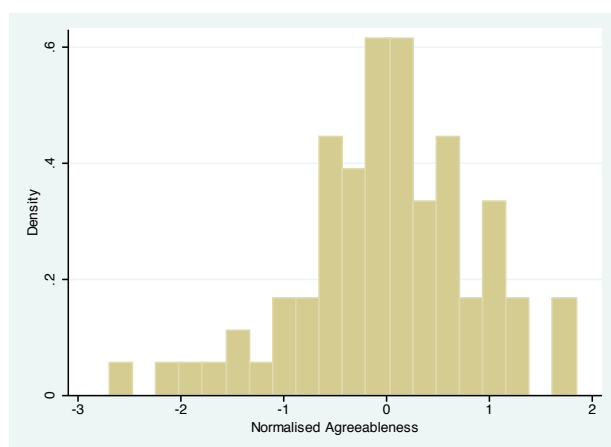
The same testing is done for the amount of clicks, which could indicate more dubitability for tea drinkers.

To compare the different groups t-tests were used. This meant the data first needed be normalised in order to check if both data groups have a normal distribution and their variance is equally distributed.

Results

Agreeableness

For normality testing, first a histogram was created for the dependent agreeableness variable. Fortunately, it resembles a normal distribution, with a small negative skew.

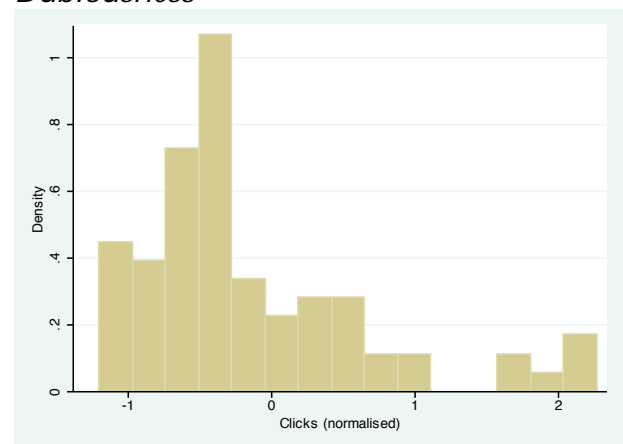


Graph 1: Histogram of normalised agreeableness

A Shapiro-Wilk test as well as a Skewness/Kurtosis test was done to confirm that the data was indeed normally distributed. Neither the first test ($z = 0,24$) nor the latter ($\chi^2 = 0,10$) did reject the assumption that the data was normally distributed. Finally, a variance-comparison tests showed that there is no significance difference ($c = 0,74$) in the variances of the two variables (1,05 and 0,99 respectively).

The t-test however, did not find a significant difference ($\alpha = 0,18$) between the two groups. ($\mu_1 = 3,35$, $\mu_2 = 3,25$).

Dubiousness



Graph 2: Histogram of normalised clicks.

The analysis of the amount of click data revealed a huge positive skew, as can be seen in *Graph 2*. Also, both the Shapiro-Wilk test and the Skewness/Curtosis test rejected the normality assumption, which subsequently make a t-test invalid.

A variance-ratio test would be meaningless since the data is not normally distributed. This also holds for the t-test, which had an outcome of $\alpha = 0,08$, with $\mu_1 = 59,2$ and $\mu_2 = 57,8$; thus the difference in clicks is non-significant.

Discussion

The results of this study reject the hypothesis that heavy tea users are more agreeable and dubious than light or non-consumers. Further research is required to determine whether there is no correlation between personality and tea at all, or that

this is only true for agreeableness and dubiousness. Also the correlation between coffee and personality can be investigated.

In following studies, a larger number of consumers could be questioned, with an equal distribution in all social groups. This is to be sure that the investigated group is

an accurate representation of the population. Furthermore, more research could be done concerning the 'heavy use' mark. While in this study this is stated as 14 cups of beverage a week, it could be investigated what is generally seen as heavy use.

References

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